

DYNAMICALLY CONFIGURABLE GAMING SYSTEM

INVENTORS:

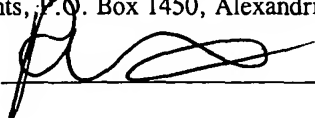
**CLIFTON LIND
BRENDAN O'CONNOR
GARY L. LOEBIG
ROBERT LANNERT
JOSEPH R. ENZMINGER
and
JEFFERSON C. LIND**

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Reg. No. 32,124, Russell D. Culbertson



1 DYNAMICALLY CONFIGURABLE GAMING SYSTEM
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3 CROSS-REFERENCE TO RELATED APPLICATIONS

4 This application is related to United States provisional patent application No. 60/470,081,
5 filed May 13, 2003, entitled "MULTIPLE VIDEO DISPLAY GAMING MACHINE AND
6 GAMING SYSTEM," the entire content of which is hereby incorporated herein by this reference.
7 The Applicants hereby claim the benefit of this earlier pending provisional application under 35
8 U.S.C. §119(e). This application is also a continuation-in-part of United States non-provisional
9 patent application No.10/ _____, filed July 22, 2003, entitled "MULTIPLE VIDEO
10 DISPLAY GAMING MACHINE AND GAMING SYSTEM" the entire content of which is
11 hereby incorporated herein by this reference. The Applicants hereby claim the benefit of this
12 earlier pending non-provisional application under 35 U.S.C. §120.
13

14 TECHNICAL FIELD OF THE INVENTION

15 The present invention relates to gaming machines that may be readily modified to change
16 the game presentation provided by the gaming machine. In particular, the invention relates to
17 systems of such gaming machines that configure the various gaming machines to provide
18 different game presentations based upon various conditions.
19
20

BACKGROUND OF THE INVENTION

A number of different games of chance may use electronic gaming machines as an interface through which players may participate in the game. For example, electronic gaming machines may be used to imitate a traditional mechanical slot machine, a poker game, blackjack game, or other traditional casino games. Electronic gaming machines may also be used to play lottery games, bingo and games similar to bingo, and other games of chance that are not necessarily related to any traditional casino game.

Electronic gaming machines are commonly housed in a large and oftentimes standalone cabinet. The cabinet includes a front side on which is mounted a game video display along with player controls. Player controls may include various types of mechanical controls such as switches, buttons, and levers mounted on a forwardly extending ledge below the game video display. Player controls may also be incorporated into the game video display itself using touch screen technology. In addition to the game video display and basic player controls through which the player makes choices or takes action in the game offered through the gaming machine, the gaming machines may also include other player interface devices such as coin or paper currency acceptors, player card or credit card acceptors, keypads, and other player interface devices. As with traditional mechanical gaming machines, electronic gaming machines also commonly include a number of static graphic displays. In electronic gaming machines, these static graphic displays are mounted above the game video display and/or below the game video display on the front side of the cabinet. These static graphic displays generally provide information regarding the game offered through the gaming machine such as pay tables and other game related

1 information, and include colorful and attractive graphics that are coordinated with the video
2 display shown on the game video display in the course of game play. The static graphic displays
3 may also incorporate non-static elements such as counters or numeric displays for showing bonus
4 or progressive play information. Video displays may also be incorporated into the static graphic
5 displays to show game related information or information unrelated to the game available at the
6 gaming machine. The graphic display located above the game video display is commonly
7 referred to as the top glass, whereas the graphic display located below the game video display is
8 commonly referred to as the belly glass.

9 The look of a particular game to a player at an electronic gaming machine may be referred
10 to as the game presentation. This game presentation includes the animated graphics displayed on
11 the game video display and associated static graphics shown on the top glass and belly glass. For
12 example, a gaming machine providing a game presentation imitating a mechanical slot machine
13 will include graphics displayed on the game video display to imitate a number of reels. In
14 response to a player control, these representations of reels are set in motion using suitable
15 graphics display techniques and are made to appear to stop at some final stop position that
16 indicates the outcome of the play. The top glass and belly glass will commonly have graphics
17 associated with a theme of the imitated slot-type game, and a payout table showing payouts for
18 various reel stop positions. As another example, a gaming machine providing a game
19 presentation imitating a poker game may include animated graphics displayed on the game video
20 display showing a card deal and allowing the player to see the cards they are dealt and perhaps
21 certain cards dealt to the house or other players depending upon the specific type of poker game

1 being portrayed. The top and belly glass graphics which are part of the poker presentation will be
2 related to the poker theme and may also include payout tables for the poker game, game rules,
3 and other information.

4 The game presentation of an electronic gaming machine may depict the actual game
5 offered through the gaming machine or some other game of chance. An example of an electronic
6 gaming machine that depicts the actual game being played is a slot machine type game in which
7 the gaming machine itself or some associated piece of equipment executes a program to
8 independently pick the reel stop positions for a given play, and thus determine the outcome of the
9 play. The component that determines the outcome of a play in these types of gaming machines,
10 including the program, logic, or rules that the component follows, will be considered part of the
11 game presentation for purposes of the present invention along with the pay tables that correlate
12 payouts with the various outcomes or results of play in the game, and along with various graphics
13 and audio that may be sensed by the player when playing at a gaming machine. A video lottery
14 terminal is an example of an electronic gaming machine that may depict a game different from
15 the game actually being played to determine a win/loss result. In video lottery terminals, the
16 win/loss result is determined by a predetermined video lottery ticket or data record that is
17 selected from a set of such records in response to a game play request. The game video display
18 of a video lottery terminal may simply show a representation of the predetermined lottery record
19 selected for a given game play request. However, the graphics provided on the game video
20 display may alternatively provide a presentation of a different game such as a presentation
21 including spinning reels imitating a traditional mechanical slot machine. The reel stop position is

dictated by the result associated with the predetermined video lottery record selected in response to a game play request at the video lottery terminal.

A given gaming facility that employs electronic gaming machines may include numerous machines to accommodate a large number of players. Each of the gaming machines is generally dedicated to a particular presentation or perhaps a number of related presentations. Although the underlying hardware included in the gaming machine may be fairly generic from one game presentation to the next, the overall game presentation provided by the gaming machine may be switched only by replacing the top glass and belly glass and perhaps by changing the player controls to accommodate the new game presentation. Thus, changing the game presentation provided by an electronic machine to an entirely different presentation is a substantial undertaking and may be accomplished only by taking the gaming machine out of service for a relatively long period of time. A switch of game presentations commonly requires removing the gaming machine from the casino floor for the changeover. That is, if a casino desires to change from a gaming machine having one presentation to a gaming machine having another presentation, essentially the entire gaming machine must be replaced or at least taken out of service for a substantial period of time to change the static graphic displays. Because switching game presentations in a gaming machine is so involved, the game presentations offered in a given gaming facility are fairly static. It is noted that even in prior art gaming machines that allow the player to choose from among several different games, portions of the game presentation remains static between the different games available at the gaming machine.

1 Gaming machines having static graphic displays associated with one or more
2 presentations offered by or through the gaming machine are also seriously limited in how they
3 may be deployed. As mentioned above, prior art gaming machines are commonly located in
4 large gaming facilities have many gaming machines. The large number of gaming machines is
5 required not only to accommodate a large number of players but also to ensure a wide variety of
6 game presentations are available in the hope that each player who desires to play will be able to
7 find the particular game presentation they desire. However, a small gaming facility may simply
8 not have the room to provide a wide variety of game presentations and at the same time ensure
9 that the most popular game presentations are also available to players at the facility.
10 Furthermore, it has not been practical to place gaming machines in locations such as hotel rooms
11 because if the persons who happen to be assigned to the room do not desire to play the game
12 having that particular presentation, the gaming machine will have little chance of being used
13 while those persons are assigned to the room. For this reason, placing prior art gaming machines
14 in places such as hotel rooms has not been cost effective.

16 SUMMARY OF THE INVENTION

17 The present invention includes a gaming system having a number of individual gaming
18 machines and the ability to dynamically reconfigure one or more of the gaming machines to
19 provide different presentations based on various conditions. The invention also encompasses a
20 method for dynamically reconfiguring one or more gaming machines based on various
21 conditions.

1 A gaming system according to the present invention includes a number of gaming
2 machines, each gaming machine including a single player game presentation arrangement that
3 may be reconfigured to provide any one of a number of game presentations. In addition to the
4 gaming machines the present gaming system includes a system configuration arrangement and
5 preferably a game modification controller. The system configuration arrangement produces
6 system configuration commands based either on manual inputs by system management personnel
7 or players, system usage information, or various information related to one or more players in a
8 gaming facility. The game modification controller included in preferred forms of the gaming
9 system receives the system configuration commands and responds to the commands by
10 generating appropriate presentation switching instructions and communicating those instructions
11 to one or more gaming machines included in the system.

12 A system configuration arrangement embodying the principles of the invention may
13 encompass a large variety of monitoring arrangements or systems in addition to a manual
14 configuration interface. Preferred forms of the invention may include one or more of a system
15 usage monitoring controller, a player location tracking controller, a player preference tracking
16 controller, and a player interface controller. These devices participate in monitoring or analyzing
17 gaming machine usage, player location, player or player group characteristics, and interactive
18 player inputs, respectively, and producing system configuration commands based on this
19 monitoring or analysis. The execution of these system configuration commands dynamically
20 configures one or more gaming machines, that is, configures one or more gaming machines in
21 response to actual or presumed conditions at the gaming facility or actual or presumed conditions

1 associated with one or more players at the gaming facility. This dynamic configuration of the
2 gaming machines may optimize the gaming system to enhance each player's experience with the
3 gaming system and generally increase gaming machine usage.

4 The present invention encompasses the gaming system itself and the methods performed
5 by the gaming system. Because the present gaming system is preferably implemented in data
6 processing hardware that operates under the control of operational program code, the invention
7 also encompasses program products for causing the various hardware elements to perform the
8 desired functions. In particular, a program product according to the present invention includes
9 system configuration program code for producing the system configuration commands. The
10 program product also includes presentation switching program code that responds to the system
11 configuration commands to switch game presentations at one or more gaming machines from one
12 presentation to another.

13 A gaming machine that may be used in the present invention may include a cabinet
14 having a game video display mounted on a front side of the cabinet. The gaming machine may
15 also include at least one more additional video displays mounted on the front side of the cabinet
16 either above or below the game video display. A player control device is also mounted on the
17 front side of the cabinet. This player control device may be separate from the video displays or
18 may be integrated with one or more of the video displays in the form of a touch screen portion of
19 one or more of the video displays. In one preferred form of the invention the player control
20 device includes a player control touch screen display that forms a portion of a forwardly
21 projecting ledge located below the game video display.

1 In addition to the player control device, a gaming machine according to the present
2 invention may also include one or more player interface devices such as a player card reader,
3 currency acceptor/validator, or coin acceptor, mounted on the cabinet. These player interface
4 devices may be mounted on the front side of the cabinet on the forwardly projecting ledge or
5 elsewhere.

6 The additional video displays mounted above and/or below the game video display may
7 be used to display the portion of a game presentation previously displayed by the static displays
8 used in prior art gaming devices. For example, a first additional video display mounted above
9 the game video display may extend across the entire front surface of an upper portion of the
10 gaming device, making up the entire area used for the top glass in prior art gaming machines.
11 Such a video display may be used to display the information and graphics previously displayed
12 by the top glass found in a prior art gaming machine. A second additional video display mounted
13 below the game video display may extend across the entire width of a lower portion of the
14 gaming device, making up the entire area used for the belly glass in prior art gaming machines.
15 Such a second additional video display may be used to display the information and graphics
16 previously displayed by the belly glass of a prior art gaming machine. Using additional video
17 displays rather than static displays provides two important advantages. First, the additional video
18 displays facilitate animated and more interesting graphics and also allow much more information
19 to be displayed. This greatly increases the flexibility of the gaming machine and allows the
20 gaming machine to provide more interesting presentations. The second major advantage
21 associated with employing additional video displays is that the additional video displays allow

1 the entire game presentation of a particular gaming machine to be modified without modifying
2 the static structure of the gaming machine itself. That is, rather than taking a gaming machine
3 out of service to change out the top and belly glass, and perhaps other static graphics on the
4 gaming machine cabinet, the additional video displays of the present invention may simply be
5 provided with different instructions to display a different presentation.

6 These and other advantages and features of the invention will be apparent from the
7 following description of the preferred embodiments, considered along with the accompanying
8 drawings.

10 BRIEF DESCRIPTION OF THE DRAWINGS

11 Figure 1 is a view in perspective of a gaming machine that may be used in a gaming
12 system embodying the principles of the invention.

13 Figure 2 is a schematic diagram showing the various components of one preferred form of
14 gaming machine that may be used according to the present invention.

15 Figure 3 is a schematic diagram showing a gaming system embodying the principles of
16 the present invention.

17 Figure 4 is a diagrammatic representation of a player position determining system
18 according to one form of the invention.

19 Figure 5 is a diagrammatic representation of an alternate player position determining
20 system according to one form of the invention.

1 Figure 6 is a process flow chart illustrating a method of configuring one or more gaming
2 machines according to the present invention.

4 DESCRIPTION OF PREFERRED EMBODIMENTS

5 Referring to Figure 1, a gaming machine 10 includes a cabinet 11 having a front side
6 generally shown at reference numeral 12. A game video display 14 is mounted in a central
7 portion of the front surface 12 with a ledge 16 positioned below the game video display and
8 projecting forwardly from the plane of the game video display. In addition to the game video
9 display 14, the illustrated form of the invention includes a first additional video display 17
10 positioned on the front side of cabinet 11 above game video display 14, and a second additional
11 video display 18 mounted on the front side of the cabinet below the game video display. Each of
12 these displays, the game video display 14, first additional video display 17, and second additional
13 video display 18 participate in the operation of game machine 10 to provide a presentation for a
14 particular game or potentially presentations for multiple games simultaneously. It is noted that
15 the gaming machine 10 is shown in an operating position in Figure 1 and the descriptions of
16 positions above or below certain elements are made with reference to this illustrated operating
17 position.

18 Gaming machine 10 illustrated in Figure 1, includes a player control touch screen display
19 15 that forms a portion of the ledge 16 extending from the plane of game video display 14. With
20 this separate player control touch screen, the illustrated gaming machine 10 includes a total of
21 four different video displays that together provide the game presentation or presentations in the

1 course of operation of the gaming machine. In addition to the separate player control touch
2 screen 15, gaming machine 10 also includes mechanical player control buttons or other input
3 devices 19 mounted on ledge 16. Other forms of the invention may include switches, joysticks,
4 or other player input devices mounted on ledge 16. However, all of the traditional player control
5 inputs from devices such as switches, buttons, and pointer controls, can be provided through the
6 illustrated touch screen display/player control device 15 and/or touch screen elements
7 incorporated with the other displays 14, 17, and 18 included in gaming machine 10. Using the
8 separate player control touch screen display 15 in gaming machine 10 allows the player controls
9 to be modified readily from one game presentation to the next and even within a single
10 presentation.

11 It will be appreciated that gaming machines may also include player interface devices in
12 addition to devices that are considered player controls for use in playing a particular game. For
13 example, gaming machines commonly include a player card reader, a voucher or ticket
14 reader/issuer, a currency acceptor/validator, and/or coin or token acceptors/dispensers. The form
15 of the invention shown in Figure 1 includes these types of additional player interface devices on a
16 lower portion of the cabinet 11 generally in the plane of the lower or second additional video
17 display 18. These additional player interface devices 20 are located around the periphery of
18 second additional video display 18. However, other forms of the invention may configure one or
19 more separate displays to make up the overall display 18 with interface devices 20 or even
20 mechanical player controls mounted within the area of the second additional video display. This

1 use of apparent openings in the video display also applies to the player control video display 15
2 and other video displays on machine 10.

3 Although Figure 1 shows four separate video displays that combine to produce the game
4 presentation or presentations for gaming machine 10, it will be appreciated that fewer video
5 displays may be used. For example, a gaming machine according to the invention may include
6 game video display 14 and only a single additional video display that may be mounted above or
7 below the game video display and take up the entire area of the gaming machine front surface
8 previously reserved for a static top glass or belly glass display. Also, although each video display
9 shown in Figure 1 is indicated as being a single display, it will be appreciated that each video
10 display 14, 15, 17, and 18 shown in Figure 1 may in fact be made up of two or more separate
11 displays that combine to provide what appears to the user to be a single display. It will also be
12 appreciated that many different types of video displays may be used for the displays in the
13 present invention including cathode ray tubes, liquid crystal displays, plasma displays, LED
14 displays or any other type of video display currently known or that may be developed in the
15 future.

16 The invention is not limited to any particular uses of the displays 14, 15, 17, and 18 in a
17 given presentation. For example, only one display among the several displays included in
18 gaming machine 10 may be used in the actual conduct of a game, while the remaining displays
19 may simply show attract graphics. In other arrangements each display may actually provide a
20 presentation for a different game. One or more of the displays 14, 15, 17, and 18 may be used to
21 provide other graphic content to the player unrelated to gaming, such as television programming

1 or movies. In yet other implementations, a portion of one or more displays 14, 15, 17, or 18 may
2 be devoted to graphics associated with one presentation while another portion of the same
3 display may be devoted to graphics for another game presentation. For example, a gaming
4 machine 10 may be controlled such that a right-hand side of the machine shows one game
5 presentation while a left-hand side of the machine shows a second different game presentation. It
6 should also be noted that one or more progressive meters may be shown on the various displays
7 in gaming machine 10, or one or more separate progressive meters/displays may be included in
8 gaming machine 10.

9 Figure 2 provides a block diagram showing all the components of gaming machine 10
10 (shown in Figure 1) including the displays 14, 15, 17, and 18. Gaming machine 10 includes a
11 central processing unit (CPU) 25 along with random access memory 26 and nonvolatile memory
12 or storage device 27. All of these devices are connected on a common system bus 28 with an
13 audio interface device 29, communications interface 30, and a serial interface 31. Two graphics
14 processors 35 and 36 are also connected on the common bus 28 and are connected to drive the
15 displays mounted on cabinet 11 (shown in Figure 1). Graphics processor 35 controls game video
16 display 14 and player control display 15 while graphics processor 36 controls first additional
17 display 17 and second additional display 18. The system shown in Figure 2 also includes a touch
18 screen controller 37 connected to system bus 28. Touch screen controller 37 is also connected to
19 receive signals from touch screen elements associated with each display, 14, 15, 17, and 18. It
20 will be appreciated that the touch screen elements themselves comprise thin films that are
21 secured over the respective video display. These touch screen elements are not illustrated or

1 referenced separately in the figures. It will also be appreciated that touch screen elements may
2 not be associated with each display, although most preferred forms of gaming machines
3 according to the present invention will have a touch screen element associated with at least game
4 video display 14 and player control video display 15.

5 All of the elements 25, 26, 27, 28, 29, 30, and 31 shown in Figure 2 are elements
6 commonly associated with a personal computer. These elements are preferably mounted on a
7 standard personal computer chassis and housed in a standard personal computer housing which is
8 itself mounted in cabinet 11 shown in Figure 1. Alternatively, the various processing elements
9 may be mounted on one or more circuit boards mounted within cabinet 11 without a separate
10 enclosure such as those found in personal computers. Those familiar with data processing
11 systems and the various data processing elements shown in Figure 2 will appreciate that many
12 variations on this illustrated structure may be used within the scope of the present invention. For
13 example, since serial communications are commonly employed from a touch screen element
14 secured over a video display, a system according to the invention may not include a separate
15 touch screen controller 37. Rather, communications from the touch screen elements may be
16 accommodated through any suitable peripheral interface such as a USB controller or a IEEE
17 1394 controller. Thus, the connections shown from touch screen controller 37 to the various
18 displays may alternatively run from the displays (or more precisely the touch screen elements
19 associated with the displays) to the serial interface 31 or any other suitable interface. Numerous
20 other variations in the gaming machine internal structure and system may be used in accordance
21 with the principles of the present invention.

1 It will also be appreciated that graphics processors are also commonly a part of modern
2 computer systems. Although two separate graphics processors 35 and 36 are shown for
3 controlling the four displays included in this form of the invention, it will be appreciated that a
4 separate graphics processor may be included in the system for each particular display. It is also
5 possible for a single graphics processor to control all of the video displays mounted on gaming
6 machine 10. Generally, the invention is not limited to any particular arrangement of graphics
7 processors for controlling the various gaming machine displays.

8 In the illustrated gaming machine 10, CPU 25 executes game software which ultimately
9 controls the entire gaming machine 10 including the presentation provided through the video
10 displays. CPU 25 also executes software related to communications handled through
11 communications interface 30, and software related to various peripheral devices such as those
12 connected to the system through audio interface 29, serial interface 31, and touch screen
13 controller 37. CPU 25 may also execute software to perform accounting functions associated
14 with game play. Random access memory 26 provides memory for use by the central processing
15 unit in executing its various software programs while the nonvolatile memory or mass storage 27
16 provides storage for programs not in use or for other data generated or used in the course of
17 gaming machine operation. Communications interface 30 provides an interface to other
18 components of a gaming system that may be involved in game play. For example, some gaming
19 machines rely on remote processing units for providing accounting functions associated with
20 game play and also for providing game results. U.S. patent No. 6,524,184 provides an example
21 of a gaming system which includes player terminals and remote systems for providing results

1 from predetermined game play records stored at the remote systems. Even where the results of
2 game play are determined at the gaming machine itself, gaming machines are commonly
3 interfaced with systems for accounting purposes and control purposes, and communications
4 interface 30 may also provide an interface for such communications. Communications interface
5 30 also provides an interface to a processor that controls presentation changes at the gaming
6 machine as will be described below with reference to Figure 3.

7 Audio interface 29 provides an interface for an audio system that may be included in
8 gaming machine 10. Serial interface 31 provides an interface for serial devices such as player
9 controls not incorporated in any touch screen display, and possibly the touch screen elements
10 themselves, and other player interface devices such as currency acceptors/validators, a player
11 card reader, voucher readers/printers, and coin/token drops. Serial interface 31 may also provide
12 an interface with various meters that may be included in gaming machine 10 such as a
13 progressive meter, for example. Commonly, a single serial interface device is used to
14 communicate with a number of serial devices through a suitable serial protocol such as USB or
15 IEEE 1394. However, it will be appreciated that additional serial interfaces may be used
16 depending upon the nature of the serial protocols used for communications and the number of
17 serial devices included in gaming machine 10.

18 It will be appreciated that other basic components will be included in gaming machine 10
19 such as a power supply, cooling systems for the various processors, audio amplifiers and
20 speakers, and other devices that are common in gaming machines. These additional devices are
21 omitted from the drawings so as not to obscure the present invention in unnecessary detail.

1 It should also be noted that the data processing required to operate the various displays
2 and other components of gaming machine 10 may be distributed to data processing devices
3 outside of the gaming machine itself. For example, gaming machine 10 may rely on data
4 processing and control from a central computer system in communication with the gaming
5 machine or various elements of the gaming machine. The example shown in Figure 2 should be
6 seen as merely one implementation of a configurable gaming machine, and the invention is not
7 intended to be limited to this particular example. Rather, the invention encompasses gaming
8 systems that include any types of gaming machines that are reconfigurable to provide different
9 game presentations at different times.

10 Referring now to Figure 3, a number of gaming machines 10 are included in a gaming
11 system 40 according to the present invention. The eight gaming machines 10 shown in Figure 3
12 only for purposes of example are divided into three separate groups indicated by dashed lines 41,
13 42, and 43. Each gaming machine 10 is shown connected to a network hub or switch 45. A
14 separate processing device 47 is also shown connected to hub/switch 45. This separate
15 processing device is used according to the invention to implement a presentation server 48 with
16 associated presentation storage 49, a modification controller 50, and a system configuration
17 arrangement 51. The illustrated system configuration arrangement 51 includes a system usage
18 monitoring controller 52, a manual interface controller 53, and a player monitoring arrangement
19 55 including a player location tracking controller 56, a player preference tracking controller 57,
20 and a player interface controller 60. Processing device 47 may comprise a single computer
21 executing software instructions to provide the communications and functions for presentation

1 server 48, presentation storage 49, modification controller 50, usage monitoring controller 52,
2 and system configuration arrangement 51 described further below. The various components of
3 system configuration arrangement 51 may rely on data or functions provided by external systems
4 or devices. For example, manual interface controller 53 will generally require an interface device
5 arrangement 54 such as a computer monitor and a control or input device such as a keyboard,
6 mouse, trackball, or touch screen controls. Player preference tracking controller 57 uses a player
7 data collection arrangement 59 in producing system configuration commands and player location
8 tracking controller 56 preferably uses a player location determining system 58 and perhaps player
9 data collection arrangement 59. These elements 54, 56, 57, 58 and 59 will be discussed further
10 below with reference to the system configuration arrangement components that use those
11 elements.

12 As indicated in Figure 3, gaming system 40 may also include a separate processing
13 system 64 for handling accounting, management, game play result determination or distribution,
14 and other functions required in the gaming system. Although game play/accounting system 64 is
15 shown in the figure as a separate system, it will be appreciated that the functions performed by
16 the game play/accounting system may in fact be performed by the same processing device 47 or
17 devices used to perform the various functions associated with system configuration arrangement
18 51 and modification controller 50. The present invention is not limited to any particular way of
19 handling accounting, management, or game play determination/distribution. For example, the
20 present invention has application to central determinant type gaming systems in which results are
21 determined by one or more central servers outside of the gaming machines and to gaming system

1 in which the individual gaming machines actually determine some or all of the results associated
2 with the games offered through system 40.

3 It will be appreciated by those skilled in the art of computer networks and computer
4 system communications that the arrangement illustrated in Figure 3 provides only a single
5 example of a network arrangement that may be used to implement the present invention. The
6 illustrated example would be appropriate for direct TCP/IP communications with the individual
7 gaming machines. Other forms of the invention may use serial communications with gaming
8 machines and may also include a suitable serial controller interposed between one or more
9 gaming machines and hub/switch 45. Still other forms of the invention may use additional or
10 emerging forms of interdevice communication technology to provide the necessary
11 communications between components in the system. The present invention is generally not
12 limited to any particular communications arrangements or protocols for providing
13 communications between the respective gaming machines 10 and the processor 47. It will also
14 be appreciated that the processing functions described below for components 48, 49, 50, and 51
15 may be distributed to different processors and are not necessarily performed by a single processor
16 indicated at reference numeral 47. In particular, the processing functions shown in Figure 3 as
17 being performed by processor 47 connected in a local area network with gaming machines 10
18 may in fact be performed by a central computer system remote from the location of the gaming
19 machines. On the other end of the spectrum, each gaming machine 10 may include sufficient
20 processing capability and operational software to perform at least some functions of the
21 modification controller 50 and system configuration arrangement 51. That is, the gaming

1 machine 10 itself may monitor system conditions or player characteristics and switch
2 presentations based upon the detected conditions or characteristics according to some
3 predetermined standard, formula, or logic. For example, a gaming machine 10 according to the
4 invention may be configured to switch presentations on its own accord in the event no player has
5 played a game on the gaming machine for a given period of time or in the event the gaming
6 machine is unused and the player location tracking controller 56 detects the presence of a
7 particular player at a location near the gaming machine.

8 Alternatively to moving processing functions to the gaming machines 10, processing
9 functions may be moved from the gaming machines to other elements of the system. For
10 example, rather than executing game software at the gaming machines 10 to produce the signals
11 required to drive the video displays and audio devices associated with a particular gaming
12 machine, the game software may be executed remotely and the video and audio feeds routed to
13 the gaming machine through a suitable signal feed arrangement.

14 The three different groups of gaming machines 10 are shown to illustrate that a gaming
15 system according to the present invention at a given gaming facility may include different groups
16 of gaming machines 10 with each different group including gaming machines controlled or
17 configured to provide a particular game presentation. The number of gaming machines 10 shown
18 in Figure 3 is shown only for purposes of example and it will be appreciated that a gaming
19 system 40 according to the invention may include large numbers of gaming machines all
20 connected for communications with one or more processors used to implement presentation
21 server 48, modification controller 50, system configuration arrangement 51, and game

1 play/accounting systems 64 according to the invention. All of the gaming machines 10 may be
2 located at a particular location such as a single casino. Alternatively, the gaming machines in
3 gaming system 40 may be spread out across two or more gaming facilities. Also, because
4 gaming machines 10 may be configured to provide any of a large number of game presentations,
5 the gaming machines may be placed in small groups at very small gaming facilities which can
6 still provide any of the game presentations available at large casinos. Single gaming machines 10
7 may also be placed directly in hotel or motel rooms and configured in any of the fashions
8 described below to produce the game presentation or presentations desired by the guest in the
9 respective room.

10 Modification controller 50 is preferably implemented through modification control
11 program code executed by processor 47 and operates to selectively issue presentation switching
12 instructions to the various gaming machines 10 included in gaming system 40. These
13 presentation switching instructions are executed at the receiving gaming machine 10 to cause the
14 gaming machine to switch from a first game presentation to a second game presentation or from a
15 first type of attract presentation to another type of attract presentation.

16 Presentation server 48 and its associated storage 49 provide a repository of a number of
17 different game presentation instruction sets and perhaps a number of attract presentation
18 instruction sets. Each game presentation instruction set includes program code executable at a
19 gaming machine 10 to provide a particular game presentation at the gaming machine. Each
20 attract presentation instruction set includes program code executable at a gaming machine 10 to
21 provide a particular attract presentation at the gaming machine. In some forms of the invention,

1 the issuance of a presentation switching instruction from modification controller 50 is made in
2 conjunction with a transfer of a given presentation instruction set or attract presentation
3 instruction set from presentation server storage 49 to the particular gaming machine or machines
4 10 receiving the switch command. Presentation server 48 and its associated storage 49 facilitate
5 storing a large number of different game presentations and attract presentations which may be
6 downloaded to the various gaming machines 10 as needed. In other forms of the invention,
7 however, each gaming machine 10 may include sufficient storage capacity (in mass storage or
8 non-volatile memory 27 shown in Figure 2) to store a large number of game presentation
9 instruction sets and different attract presentation instruction sets. Storing game presentation and
10 attract presentation instruction sets at the gaming machines reduces the need for a presentation
11 server 48 and storage 49 respectively at a central location such as processor 47, however, a server
12 and related storage may still be included in the system to store new game presentation software
13 prior to downloading to the various gaming machines 10. In cases where the game presentation
14 and attract presentation instruction sets are prestored on gaming machines 10, the presentation
15 switching instruction from modification controller 50 simply causes the gaming machines to load
16 and execute a particular one of the presentation instruction sets identified in the switching
17 instruction.

18 Modification controller 50 issues presentation switching instructions in response to one or
19 more system configuration commands derived or produced by the various components of system
20 configuration arrangement 51 based upon various types of data including system condition data
21 and player-related data. Modification controller 50 may also be configured to issue presentation

1 switching instructions in response to a player input at one of the gaming machines 10. The
2 various components that may be included in system configuration arrangement 51 and the
3 information those components use to produce system configuration commands will be discussed
4 in the following paragraphs.

5 The usage monitoring controller 52 shown in Figure 3 is preferably implemented by
6 usage monitoring program code executed by processor 47 and monitors the usage of the various
7 gaming machines 10 included in system 40. Upon detecting certain predetermined usage
8 conditions, monitoring controller 52 may issue a system configuration command to modification
9 controller 50 which responds by issuing presentation switching instructions to one or more
10 gaming machines 10. For example, where the usage information indicates that all or most of the
11 gaming machines at a facility offering a particular game presentation are in use while gaming
12 machines providing another game presentation are not in use, usage monitoring controller 52
13 may communicate a system configuration command to modification controller 50 to cause the
14 modification controller to issue presentation switching instructions to unused gaming machines
15 offering the less popular game presentation. These switching instructions would cause the
16 receiving gaming machines 10 to switch to provide the more popular game presentation. Of
17 course, the issuance of instructions to switch from one game presentation to another in a
18 particular gaming machine may not be fully automated and may require certain operator
19 intervention within the scope of the invention, regardless of the bases under which the switch
20 instructions were generated.

1 The illustrated manual interface controller 53 is preferably implemented through manual
2 interface program code executed by a suitable processor such as processor 47. Manual interface
3 controller 53 communicates with interface device arrangement 54 which may comprise a display
4 screen and suitable pointing/selection device such as a keyboard, mouse, trackball and/or touch
5 screen control. In preferred forms of the invention, controller 53 produces a suitable graphical
6 interface through interface device arrangement 54 which allows a system manager to produce
7 inputs which may be interpreted by controller 53 to generate system configuration commands to
8 be communicated to modification controller 50. For example, a system manager may know that
9 the players in a gaming facility fit a certain profile at a certain time. The manager may know this
10 from experience with the gaming facility or from other information (for example the arrival at the
11 gaming facility of several tour buses full of players fitting a certain profile). Regardless of how
12 the system manager bases his decisions, the manager may make inputs through interface device
13 arrangement 54 to cause a certain number of gaming machines in the gaming facility to switch to
14 provide a game presentation that will hopefully be particularly attractive to the players at the
15 facility.

16 Player monitoring arrangement 55 shown in Figure 3 includes player location tracking
17 controller 56 and player preference tracking controller 57 which are both again preferably
18 implemented using program code. In particular, player location tracking controller 56 is
19 preferably implemented with player location controller program code and player preference
20 tracking controller 57 is preferably implemented with player preference tracking controller
21 program code.

1 Player location tracking controller 56 cooperates with player tracking system 58 to track
2 the physical location of various players in a gaming facility, and detect presentation switching
3 conditions related to the physical location of various players. Player preference tracking
4 controller 57 cooperates with player data collection system 59 to monitor for conditions related to
5 various characteristics of players using a particular gaming facility. It should be noted that player
6 location tracking controller 56 may also use data from player data collection system 59 in
7 formulating system configuration commands. Player interface controller 60 provides for
8 interaction with one or more players using gaming machines 10 in the system so that system
9 configuration commands may be based not only on player characteristics but also on interactions
10 or communications with players.

11 Figures 4 and 5 show alternate systems that may be employed as the player position
12 determining system 58 shown in Figure 3 to provide player position information to player
13 location tracking controller 56. Referring first to Figure 4, a first alternate player position
14 determining system relies on a radio frequency transponder 68 carried by the player 70 and
15 preferably at least three receivers 71, 72, and 73 located at different positions around the
16 periphery of a gaming facility in which the player's position is to be tracked. This system relies
17 on timing variations between the receipt of the transponder signal at the various receivers 71, 72,
18 and 73 for calculating the location of the player 70 in the gaming facility. Time variations are
19 communicated from receivers 71, 72, and 73 to a position determining processor 74 which
20 determines the player position according to some coordinate system. Processor 74 then
21 communicates the player position information to player location tracking controller 56. Player

1 location tracking controller 56 uses the player location information to determine where the player
2 is in relation to a particular gaming machine or group of gaming machines such as the three
3 gaming machines 10 shown in Figure 4. For example, player location tracking controller 56 may
4 recognize a player approaching an unused gaming machine as a presentation switching condition,
5 and may use information about the player's preferences (from player data collection 59 directly
6 or through player preference tracking controller 57) to cause the gaming machine to switch to the
7 player's preferred presentation. Thus, as player 70 approaches the three unused gaming
8 machines 10 in Figure 4, player location tracking controller 56 may issue presentation switching
9 instructions to the gaming machines. The graphic then displayed at the gaming machines may be
10 a special attract presentation tailored for that player or may be for a game presentation known to
11 the system 40 to be favored by player 70, or likely to be favored by the player based on known
12 player preferences or play characteristics. A special attract presentation may even cause the
13 gaming machine to call the player's name as the player approaches in an attempt to prompt the
14 player to stop and play a game at the machine. As another example, player position information
15 may be used by the player location tracking controller 56 to optimize a certain room in a gaming
16 facility for the various players detected in that room. The optimization may encompass switching
17 game presentations for the various unused gaming machines in the room or area of a gaming
18 facility to presentations favored by the players in the room or likely to be favored by the players
19 in the room.

20 Figure 5 shows an alternate arrangement for the player position tracking system 58 shown
21 in Figure 3. This alternate position tracking system includes a transceiver 80 carried by a player

1 81 and a number of detectors 82, 83, 84, and 85 located at various positions throughout a gaming
2 facility. The detectors may be associated with each gaming machine for example. Regardless of
3 how the detectors are arranged, each detector includes a transmitter that transmits a RF signal in
4 a certain area, such as area 87 in front of detector 82. This RF signal energizes transceiver 80 in
5 the transmission area and causes the transceiver to emit a return RF signal containing player
6 identifying information such as an identifier unique to the player. This return signal is picked up
7 by a receiver associated with detector 82 and indicates that the player is located in range of that
8 particular detector. Information from the individual detectors may be supplied to player location
9 tracking controller 56 (shown in Figure 3) which may act on that player location information to
10 formulate system configuration commands for modification controller 50. Alternatively, data
11 from the various detectors 82, 83, etc. may be combined to provide player location information to
12 be used by player location tracking controller 56 in detecting presentation switching conditions
13 and formulating appropriate switching signals. Figure 5 does not show the communications lines
14 from individual detectors 82, 83, 84, and 85, however, it will be appreciated that these devices
15 communicate information to player location tracking controller 56 for processing directly or to
16 some intermediate processing element before controller 56. Detectors 82, 83, etc. may be built in
17 or otherwise associated with gaming machines 10 themselves as indicated in Figure 5. In this
18 arrangement, the player location tracking controller 56 may be advised when a player approaches
19 a gaming machine 10 even before the player decides to play by logging into the machine.
20 However, other forms of the player location tracking system 58 may include the detectors 82, 83,
21 etc. at other locations in addition to or in lieu of locations at the gaming machines 10.

1 Alternatively to the player-carried transceiver, the player may carry some other device
2 that may be read or detected when within a certain range of a suitable detecting device. For
3 example, a player may carry an exposed badge that includes a bar code unique to the player, and
4 the detecting device may comprise a bar code reader. As another example, the player may carry
5 an exposed badge that is encoded with a color pattern unique to the player and the detector may
6 be capable of reading or detecting the color pattern and distinguishing it from other color patterns
7 assigned to other players.

8 Referring again to Figure 3, player preference tracking controller 57 preferably produces
9 system configuration commands for modification controller 50 based at least partially on actual
10 player preferences or presumed or projected player preferences. Controller 57 may produce
11 system configuration commands based on characteristics of a particular player known to be at a
12 given gaming location of the system, or based upon characteristics of a group of players known
13 or expected to be at a certain gaming location in the system at certain times. The manner in
14 which controller 57 produces system configuration commands will normally define the sort of
15 data that must be collected or be available through player data collection arrangement 59. The
16 following examples illustrate the operation of player preference tracking controller 57 and the
17 type of data that may be required from data collection arrangement 59.

18 In one form of the invention, player preference tracking controller 57 may use artificial
19 intelligence techniques or any other suitable techniques to analyze player demographics and/or
20 game presentation use patterns together with time of day information available through data
21 collection arrangement 59 to produce system configuration commands to optimally configure a

1 gaming facility or location according to the time of day and/or day of week and/or by month or
2 season. For example, historical data may indicate that a first age group predominates in a given
3 gaming facility over a certain period of the day and a second age group predominates in another
4 period of the day. The data may also show that each different age group has a preference for a
5 certain type or style of game presentation. In this situation, controller 57 may issue signals to
6 modification controller 50 to switch unused gaming machines 10 from a game presentation or
7 style of presentation favored by the first age group during the time that group predominates.
8 Controller 57 may then cause unused gaming machines 10 to switch to a game presentation style
9 favored by the second age group for the hours the second age group historically dominates.

10 Alternatively to using historical data from the data collection arrangement 59, player
11 preference tracking controller 57 may monitor actual current player age or other characteristics to
12 optimally configure the game presentations available through gaming machines 10 in a given
13 gaming facility or location. This optimization or gaming machine configuration based on current
14 player characteristics may be implemented especially in gaming facilities that require or allow
15 player club cards or other player identification cards to gain current player information. For
16 example, player card inputs at a gaming facility may indicate that a large number of players
17 fitting a certain player profile are currently in the gaming facility. Player preference tracking
18 controller 57 may use this current player information and profile information in producing system
19 configuration commands to switch unused gaming machines to provide presentations likely to be
20 favored by players matching the identified profile.

1 Another example of the use of current player information according to the invention
2 relates to the optimization reconfigurable gaming machines 10 placed in limited access rooms
3 such as hotel rooms. Player data collection arrangement 59 may include a database that collects
4 check-in or room assignment information at a hotel that may be associated with a casino or
5 independent from any casino. Player preference tracking controller may use this check-in or
6 room assignment information to identify an individual assigned to a particular room and also use
7 historical game preference data for that individual to formulate a system configuration command
8 for the particular gaming machine 10 in the individual's room. The command would direct
9 presentation switching as necessary to switch the presentation provided at the gaming machine
10 10 to a presentation preferred by the individual.

11 A still further example of the operation of player preference tracking controller 57
12 involves monitoring for certain actions of the player and matching those actions to historical
13 behavior. For example, a player may have a history of playing one game presentation for a
14 certain period of time, then switching to another game presentation, and then perhaps another. In
15 light of this historical behavior, player preference tracking controller 57 may monitor for the
16 player to log off a gaming machine and respond to a log off by issuing a configuration command
17 to effect a change in the game presentation to another game favored by the player.

18 The invention is not limited to any particular type of player data collection arrangement
19 59 or database structure used to collect and organize the data required by player preference
20 tracking controller 57. Player data collection arrangement 59 may be a player card or club card
21 system or any other type of player identifying system that assigns a unique identifier to each

1 player and stores player demographic data and perhaps preference data at the time the identifier is
2 assigned. These systems typically require the player to login to play any of the gaming machines
3 and use this login information to collect additional player preference data. Alternatively to player
4 card or player club tracking systems, player data may be collected manually by player surveys or
5 player observation. Regardless of the manner in which the player data is collected, stored, or
6 maintained by player data collection arrangement 59, player preference tracking controller 57
7 accesses this data and analyzes the data together with data on gaming facility layout and current
8 gaming machine usage information to generate game system configuration commands for
9 presentation switching controller 50. It is also important to note that the present system collects
10 important data regarding player preferences and reactions to various game presentations. Thus,
11 the system 40 in Figure 3 may be configured to add data to player data collection arrangement 59
12 or some other database of player data. It is important to note that one important use of the
13 present invention is in monitoring player reaction to new game presentations. The system may
14 be configured to collect certain types of data after a switching to a newly devised game
15 presentation in an effort to monitor a player's reaction and perhaps obtain ideas for further
16 presentations or ideas for changes to the monitored presentation.

17 Player interface controller 60 is responsible for initiating or conducting game
18 presentation-related communications with players at various gaming machines 10 in the system
19 shown in Figure 3. These communications are preferably accomplished through one or more of
20 the displays (such as displays 14, 15, 17, and 18 in Figure 1) included in the gaming machines 10
21 and convey information to the player to facilitate presentation changes at the gaming machine

1 that might interest the player. Unprompted player requests for game presentation changes at one
2 or more gaming machines may also be routed through player interface controller 60. The
3 following examples illustrate the operation of controller 60.

4 Assume that a player who has a history of playing a particular game presentation or type
5 of presentation logs on to a gaming machine 10 in Figure 3 providing a different presentation or
6 type of presentation. Controller 60 may detect this by receiving player log on information from a
7 suitable player log on system and accessing data about the player from a suitable data collection
8 such as that stored at collection arrangement 59. This use of a game presentation new to the
9 player may indicate that the player is feeling adventurous at that time or may be bored with their
10 historically favorite game presentation. In any event, player interface controller 60 may, between
11 games at the gaming machine or at other appropriate times, direct the gaming machine to provide
12 a graphical interface that would allow the player to choose a newly created game having a
13 presentation of the same type as the player's previous favorite or choose a different game
14 presentation having a theme that might be of interest to the player based on the player's
15 demographics or other characteristics. The player may also be given the choice to participate in
16 special games that may be of interest to the player such as tournament games involving a given
17 game presentation or presentations. Alternatively, a graphical interface may be provided at
18 gaming machine 10 when a player logs on to a game having a presentation that has a recently
19 updated version. This interface at the gaming machine may be used to offer the player the chance
20 to choose that updated version without having to get up and go to a different gaming machine. In
21 either of these examples, if the player indicates their desire to try a different game presentation

1 through the provided graphical interface, controller 60 sends system configuration commands to
2 presentation modification controller 50 to cause the modification controller to effect the change
3 to the new game presentation.

4 Another example of the operation of player interface controller 60 arises in a situation in
5 which a player has a history of switching game presentations after a certain period of play. In
6 these situations player interface controller 60 may monitor the time that the player has been
7 playing a given machine and then offer new presentations at times when the player is likely to
8 desire a switch to a different game presentation.

9 Player interface controller 60 may also be used to cause a change in game presentation at
10 more than one gaming machine 10 in Figure 3. For example, a player having a history of playing
11 together with a group of other players may log on to a given gaming machine 10 in Figure 3.
12 Controller 60 may detect this condition and may provide a graphic interface that would ask if the
13 player desires to play in a group, how many players are in the group, and which game
14 presentation the group wants to play. Assuming there are enough unused gaming machines
15 adjacent to each other to accommodate the group, player interface controller 60 may respond to
16 the player's answer by issuing system configuration commands to controller 50 to effect
17 presentation changes at a whole block of adjacent gaming machines.

18 It will be appreciated from the above examples regarding the operation of player interface
19 controller 60 that it may require data from player data collection arrangement 59, player position
20 determining system 58 and/or a player tracking system such as a player card or club card system.
21 Figure 3 therefore indicates that controller 60 is connected for communications with position

1 determining arrangement 58 and player data collection arrangement 59. Alternatively, to
2 obtaining information directly from the position determining arrangement 58 and data collection
3 arrangement 59, controller 60 may receive the required data indirectly through player preference
4 tracking controller 57 and player location tracking controller 59 as indicated by the dashed lines
5 in Figure 3. Furthermore, the answers provided by the player through the various interfaces
6 displayed to the player may represent important player preference information that may be
7 directed to player data collection arrangement 59. Thus, controller 60 may direct information to
8 the player data collection arrangement 59 as well as use data from such arrangement.

9 It will be appreciated that the specific system configuration arrangement 51 shown in
10 Figure 3 is shown only for purposes of example and that the invention is not limited to this
11 particular arrangement. A system configuration arrangement within the scope of the present
12 invention may include all of the illustrated components 52, 53, 55, 56, 57, and 60, or just one or
13 more of these illustrated components. Also, the various functions performed by the illustrated
14 components of system configuration arrangement 51 in Figure 3 may be allocated or distributed
15 differently between various logical components within the scope of the present invention. Again,
16 these components are preferably implemented in software executed by a suitable data processing
17 device.

18 From the above examples of the various controllers used to produce system configuration
19 commands according to the invention, it will be noted that the various controllers may require
20 current system status information in order to produce effective system configuration commands.
21 Thus, the present gaming system also includes a suitable status controller 61 shown in Figure 3

1 that maintains current system status information. In particular, status controller 61 maintains
2 information on the current presentation being produced at a gaming machine 10 and whether the
3 gaming machine is in use or idle. Status controller may maintain other information such as
4 which game presentations have recently been produced at a given gaming machine and how long
5 a particular gaming machine has been idle or in use.

6 As shown in Figure 6, a process of dynamically configuring a gaming machine includes
7 producing a system configuration command as shown at process block 90 and ultimately
8 switching a game presentation at one or more gaming machines as indicated at process block 91.
9 The system configuration commands may be based at least partially on system usage as
10 monitored by usage monitoring controller 52 (shown in Figure 3). Thus, the process according to
11 the invention may include monitoring gaming machine usage as indicated at process block 94.
12 System configuration commands may also be based at least partially on player preference
13 information as discussed above with reference to player preference tracking controller 57. Thus,
14 the process shown in Figure 6 includes at process block 95 the step of accessing or receiving and
15 then analyzing player preference data using artificial intelligence and other analytical or data
16 processing techniques. As described above with reference to player interface controller 60,
17 system configuration commands may be based at least partially on interaction or communications
18 with a player at one of the gaming machines in the system. Process block 96 shows the process
19 of transmitting game information to the player while block 97 shows receiving a player response
20 that may be used to formulate a system configuration command. Process block 98 in Figure 6
21 shows the step of producing or receiving player location information for use in formulating a

1 system configuration command. This process step is performed by player location tracking
2 controller 56 described above. The step of producing a system configuration command may also
3 include receiving a manual input as shown at process block 99. This manual input may be
4 received through manual interface controller 53 as described above or through a game
5 presentation switching request or command entered by a player at a gaming machine.

6 In some preferred forms of the invention the system configuration commands are not
7 directly acted upon by the gaming machines to be configured. In these cases the system
8 configuration commands prompt the creation of presentation switching instructions as shown at
9 process block 100 in Figure 6. These switching instructions are then communicated to the
10 affected gaming machine or machines as shown at process block 101. These steps of producing
11 presentation switching instructions in response to the system configuration commands and then
12 communicating those instructions to the gaming machines may be performed by the modification
13 controller 50 by itself or in conjunction with presentation server 48.

14 The presentation switch instruction issued at process block 101 will be directed to at least
15 one recipient gaming machine 10 shown in Figures 1 through 3 using the applicable
16 communications protocol, and may include data identifying the game presentation to be used at
17 the gaming machine or the data or instruction set for the presentation itself. In this latter case,
18 the data or instruction set itself may be directed from presentation server storage 49 shown in
19 Figure 3.

20 For purposes of example, assume that the gaming machines 10 in group 41 provides a
21 game presentation A, each of the gaming machines in group 42 provides a different game

1 presentation B, and each gaming machine 10 in group 43 provides yet a different presentation C.

2 In this example, assume that presentation A happens to be particularly popular at one point in
3 time and that all of the gaming machines providing that presentation, that is, all gaming machines
4 10 in group 41, are in use. Further assume that at least some of the machines providing the C
5 presentation, that is, the gaming machines 10 in group 43 are not in use. It may be desirable in
6 that situation to have more gaming machines 10 in the gaming facility to switch over to
7 presentation A from presentation C. According to the present invention, the switch in game
8 presentations is accomplished by communicating a presentation switching instruction from
9 modification controller 50, and perhaps a set of game presentation instructions from server
10 48/storage 49, to one or more of the unused gaming machines 10 in group 43. The switching
11 instruction will cause the receiving gaming machine 10 to switch presentations to the desired
12 presentation. The new game presentation will include different graphics for the game video
13 display 14 associated with the gaming machine as shown in Figures 1 and 2, and usually different
14 graphics for each additional video display such as displays 15, 17, and 18 shown in Figures 1 and
15 2. In the embodiment of the invention illustrated in Figure 3, usage monitoring controller 52
16 would collect the gaming machine usage information either directly from the gaming machines
17 themselves or through some intermediary such as status controller 61, and, where that usage
18 information meets certain switch conditions, issue signals or commands to modification
19 controller 50 to cause it to issue the presentation switching instructions to the appropriate gaming
20 machines.

1 It is apparent in this example how the additional video displays 15, 17, and 18 shown in
2 Figures 1 and 2 allow switching game presentations without taking the gaming machine 10 out of
3 service for any extended period. Furthermore, the example illustrates how the present invention
4 enables the game presentations offered at a given gaming facility to be modified to meet demand
5 and to optimize gaming machine usage. Of course, as described above with reference to the
6 player preference tracking controller 57, player location tracking controller 56, manual interface
7 controller 53, and player interface controller 60, the present invention encompasses many
8 additional conditions either actual or presumed/projected for developing system configuration
9 commands which ultimately cause gaming machines 10 to switch from one presentation to
10 another.

11 The above described preferred embodiments are intended to illustrate the principles of the
12 invention, but not to limit the scope of the invention. Various other embodiments and
13 modifications to these preferred embodiments may be made by those skilled in the art without
14 departing from the scope of the following claims. For example, although the invention
15 contemplates switching from one game presentation to an entirely different game presentation,
16 the switching may be between somewhat related game presentations, or presentations having
17 elements in common with the earlier presentation at the gaming machine. Furthermore, the
18 invention may be implemented in a data processing environment in which more processing tasks
19 are performed at a central processing device rather than the individual gaming machine CPUs.